

### **REMARKS**

This is a full and timely response to the non-final Office Action mailed by the U.S. Patent and Trademark Office on July 5, 2007. Claims 3, 4, 7-10, 13 and 14 are pending in the present application. In view of the following remarks, reconsideration and allowance of the present application and claims are respectfully requested.

#### **Rejections Under 35 U.S.C. § 103**

##### Claims 3, 7-8, 10 and 14

Claims 3, 7-8, 10 and 14 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.K. Patent Application No. GB 2191356A to Leuch (hereafter *Leuch*) in view of U.S. Patent No. 4,874,218 to Bowen *et al.* (hereafter *Bowen*). For a claim to be properly rejected under 35 U.S.C. § 103, “[t]he PTO has the burden under section 103 to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Office Action states that

*Leuch* teaches an optical radiation source (3), and output transmission path (output of 3), an optical radiation detector (6), and input radiation path (input to 6), a loop back arrangement (path that goes through 5) which selectively causes the radiation by the source to at least partly propagate from the output path to the input path, and an attenuator (21 of figure 3). In regard to the “wherein” clause with regard to the function of the attenuator, when *Leuch* describes the attenuator, he teaches that it could be variably attenuating or ON/OFF switching. The on/off switching

Although *Leuch* does not teach specifics about the switch means that provides the loop back, *Bowen et al.* teach plural switch means that provide loop back. He teaches that it is well known to us fiber (similar to *Leuch*, figure 3b) or

reflectors/mirrors (figures 3a and 3c). In regard to claim 3, see figure 4 of Bowen et al. The mirrors are movable. It would have been obvious to use either mirrors or fibers as taught by Bowen et al in the system of Leuch since Bowen teaches that it is well known to use either in order to provide loop back. In regard to claim 14, although Leuch does not specifically teach that the circuit is arranged as a planar light wave circuit, it is well-known to integrate circuits in a planar manner in order to avoid noise that is caused by elements integrated on different substrates and to provide better alignment. It would have been obvious to integrate circuits in a planar manner in order to avoid noise that is caused by elements integrated on different substrates and to provide better alignment. In regard to claim 9, in that Leuch teaches that the amount that is coupled by coupler 4 is a proportion of the power from 4. It would appear that he would like a specific ratio. If using mirrors as taught by Bowen, the invention would still require a ratio of the signal to be split/passed through. In regard to claim 10, it would have been obvious to have an attenuator located between the source and the first loop back means in order to use fewer components. When the system is not in a loop back, the attenuator could be used to control the signal that was sent over the communication system.

Applicant respectfully points out that the text of the Office Action on page 2 in paragraph 2 is incomplete. Specifically, the first full paragraph under subheading 2 of the Office Action concludes with the partial sentence "The on/off switching." Applicant respectfully requests clarification in a subsequent non-final action.

*Leuch* appears to disclose an optical transmission system including an automatic or a semiautomatic fault location system that is affected by a loop back component (10) connected to a terminal's transmitting equipment (3) via a first optical coupler (4) and to an output to which a receive power meter (9) can be connected. *See Leuch*, Abstract.

Specifically, in Figure 1, *Leuch* discloses that the terminal is connected to the outgoing and incoming single mode optical fiber 1 and 2 of a transmission cable which may be connected to the highway of a local area network, or to a line circuit at a telephone exchange, or to a trunk transmission system. The transmitting line terminating equipment 3 is connected via a low tap ratio optical coupler 4 to the outgoing fiber 1 and to a loop back component 5. The receiving line terminating equipment 6 is connected so as to receive incoming light signals from the fiber 2 via another low tap ratio coupler 7. *See Leuch*, column 1 lines 49 through 60.

Importantly, there is nothing in *Leuch* that describes the loop back component 5 being integral within an optoelectronic module. Neither does *Leuch* describe the transmitter 3 or

the receiver 6 being co-located on the same module, much less on the same module as the loop-back component 5.

*Bowen* discloses a reversible optical switch which allows a node to be inserted into or removed from a fiber optic network. *See Bowen*, Abstract. Further, *Bowen* fails to cure the defects of *Leuch* in that the system described by *Bowen* resides outside of the transceiver module 130. Specifically, as shown in figures 5A and 5B of *Bowen*, the switch 150 is a separate and distinct element from the transceiver 130.

Specifically, *Bowen* states that figures 5A and 5B schematically illustrate an actual connection between a transceiver 130 (which comprises the transmitter and receiver) and the incoming and outgoing optical fibers of a network. Figure 5A shows the components used to form the connection in an unassembled condition while figure 5B shows the components after assembly. *See Bowen*, column 5, lines 23 through 29. Specifically, *Bowen* describes that the unit 150 contains the switch of the present invention. The unit 150 is connected by means of a duplex connector 160 to the side 144 of the interconnect housing which is opposite to the side 140. The transceiver unit 130 also includes a duplex connector 136 which is received in the switch 150 on a side 152 oppositely disposed from the interconnect housing 142. *See Bowen*, column 5, lines 41 through 47.

From this it is abundantly clear that the proposed combination fails to disclose teach or suggest at least “the module comprising, as an integral part thereof, a loop-back arrangement selectively activatable to cause said optical radiation generated by said source to at least partly propagate from said output transmission path towards said input transmission path,” as recited in claim 8. Further, the proposed combination fails to disclose teach or suggest at least “an optical attenuator arranged to be traversed by said optical radiation propagating from said source towards said optical detector,” as recited in claim 8.

Applicant respectfully submits that at least these features are not disclosed, taught nor suggested by the proposed combination. Accordingly, Applicant respectfully submits that independent claim 8 is allowable over the proposed combination. Further, Applicant respectfully submits that dependent claims 3, 7, 10 and 14 are allowable for at least the reason that they depend directly or indirectly from allowable independent claim 8. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988) (Citations omitted).

Claim 4

Claim 4 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Leuch* in view of *Bowen* and further in view of Electrically Switchable Mirrors and Optical Components Made From Liquid-Crystal Gels by Hikmet et al. (hereafter *Hikmet*).

Applicant respectfully submits that the proposed combination fails to disclose, teach or suggest all elements of claim 8. Accordingly, Applicant respectfully submits that dependent claim 4 is allowable for at least the reason that it depends directly from allowable independent claim 8. *In re Fine, supra*.

Claim 13

Claim 13 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Leuch* in view of *Bowen* and further in view of U.S. Patent No. 4,910,727 to Fussganger (hereafter *Fussganger*).

Applicant respectfully submits that the proposed combination fails to disclose, teach or suggest all elements of claim 8. Accordingly, Applicant respectfully submits that dependent claim 13 is allowable for at least the reason that it depends directly from allowable independent claim 8. *In re Fine, supra*.

**CONCLUSION**

Should the Examiner have any comments regarding the Applicant's response or believe that a teleconference would expedite prosecution of the pending claims, Applicant requests that the Examiner telephone Applicant's undersigned attorney.

Respectfully submitted,

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